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di·ag·nos·tic s k)
adj.

Of, relating to, or used in a diagnosis.

Serving to identify a particular disease; characteristic.

n.

The art or practice of medical diagnosis. Often used in the plural with a singular verb.

A symptom or a distinguishing feature serving as supporting evidence in a diagnosis.

An instrument or a technique used in medical diagnosis.

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1: Proc Natl Acad Sci U S A. 1992 Dec 15;89(24):11949-53. Related Articles, Links

Detection of glutamine synthetase in the cerebrospinal fluid of Alzheimer diseased patients: a potential diagnostic biochemical marker.

Gunnersen D, Haley B.

Department of Biochemistry, College of Pharmacy, University of Kentucky, Lexington 40536-0084.

In this report, 8- and 2-azidoadenosine 5'-[gamma-32P]triphosphate were used to examine cerebrospinal fluid (CSF) samples for the presence of an ATP binding protein unique to individuals with Alzheimer disease (AD). A 42-kDa ATP binding protein was found in the CSF of AD patients that is not observed in CSF from normal patients or other neurological controls. The photolabeling is saturated with 30 microM 2-azidoadenosine 5'-[gamma-32P]triphosphate. Photoinsertion can be totally prevented by the addition of 25 microM ATP. Photoinsertion of 2-azidoadenosine 5'-triphosphate into the protein is only weakly protected by other nucleotides such as ADP and GTP, indicating that this is a specific ATP binding protein. A total of 83 CSF samples were examined in a blind manner. The 42-kDa protein was detected in 38 of 39 AD CSF samples and in only 1 of 44 control samples. This protein was identified as glutamine synthetase [GS; glutamate-ammonia ligase; L-glutamate:ammonia ligase (ADP-forming), EC 6.3.1.2] based on similar nucleotide binding properties, comigration on two-dimensional gels, reaction with a polyclonal anti-GS antibody, and the presence of significant GS enzyme activity in AD CSF. In brain, GS plays a key role in elimination of free ammonia and also converts the neurotransmitter and excitotoxic amino acid glutamate to glutamine, which is not neurotoxic. The involvement of GS, if any, in the onset of AD is unknown. However, the presence of GS in the CSF of terminal AD patients suggests that this enzyme may be a useful diagnostic marker and that further study is warranted to determine any possible role for glutamate metabolism in the pathology of AD.

PMID: 1361232 [PubMed - indexed for MEDLINE]

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Mar 29 2005 17:30:14

Limits: **Publication Date from 1999 to 2000**

1: Drugs Today (Barc). 1999 Dec;35(12):895-911. Related Articles, Links

Insulin resistance: current therapeutic approaches.

Ramarao P, Kaul CL.

Department of Pharmacology and Toxicology, National Institute of Pharmaceutical Education and Research (NIPER), Nagar, India.

Insulin resistance, an impaired biological response to either exogenous or endogenous insulin occurs in a majority of the diabetic population with type II diabetes. One of the current approaches for treating insulin resistance associated with NIDDM is the use of insulin sensitizing agents. Elucidation of the mechanism(s) of these agents may provide new targets for which selective ligands with better efficacy and low toxicity can be found.

PMID: 12973417 [PubMed]

1: Diabetologia. 2000 Sep;43(9):1099-106.

Comment in:

- Diabetologia. 2001 Apr;44(4):518-9.
- Diabetologia. 2001 Apr;44(4):519-20.

The influence of improved glycaemic control with insulin and sulphonylureas on acute phase and endothelial markers in Type II diabetic subjects.

Yudkin JS, Panahloo A, Stehouwer C, Emeis JJ, Bulmer K, Mohamed-Ali V, Denver AE.

Department of Medicine, University College London Medical School, Whittington Hospital, UK.

AIMS/HYPOTHESIS: Improved glycaemic control might reduce both microvascular and macrovascular complications of Type II diabetes (non-insulin-dependent) mellitus. To explore such possible mechanisms, we investigated the effects of intensive treatment on markers of endothelial dysfunction and of acute phase activation, using both sulphonylureas and insulin. METHODS: In a randomised cross-over study we gave sulphonylureas or insulin each for a period of 16 weeks to 22 poorly controlled Type II diabetic subjects who were being treated by diet. There was a 4 week washout period between each treatment. Subjects were studied at baseline and at the end of each treatment. RESULTS: Treatment with sulphonylureas and insulin resulted in similar improvements in glycaemic control (glycated haemoglobin, baseline: 11.8 [(SD 2.2)%; after sulphonylureas: 8.6 (1.2)%,$p < 0.001$; after insulin: 8.6 (1.2)%, $p < 0.001$] and in insulin sensitivity inverted question markmetabolic clearance rate of glucose, baseline: median 1.75 [interquartile (IQ) range 1.41, 2.27] ml x kg (-1) x min(-1); after sulphonylureas: 2.41 (1.82, 3.01) ml x kg(-1) x min(-1), $p = 0.001$; after insulin: 2.23 (1.92, 2.75) ml x kg(-1) min(-1), $p = 0.027$ inverted question mark. There were no significant changes in concentrations of endothelial markers von Willebrand factor, cellular fibronectin, thrombomodulin, tissue plasminogen activator, soluble E-selectin or soluble

intercellular adhesion molecule-1 or in urinary albumin excretion rate after either treatment period. Concentrations of C-reactive protein were not significantly influenced by sulphonylureas but fell after insulin [baseline: median 4.50 (IQ range 1.37, 6.44) microg x ml(-1); sulphonylureas: 2.69 (0.88, 9.65) microg x ml(-1) ($p = 0.53$); insulin: 2.07 (1.16, 5.24) microg x ml(-1) ($p = 0.017$)]. There were, however, no significant effects of either treatment on circulating concentrations of fibrinogen ($p = 0.28$-0.34) or of the proinflammatory cytokines interleukin-6 or tumour necrosis factor-alpha ($p = 0.65$-0.79). CONCLUSION/INTERPRETATION: Markers of endothelial dysfunction and concentrations of proinflammatory cytokines in Type II diabetes are not influenced by improved glycaemic control over 16 weeks. Improved metabolic control with insulin could, however, be associated with reduced concentrations of the acute phase marker C-reactive protein.

Publication Types:

- Clinical Trial
- Multicenter Study
- Randomized Controlled Trial

PMID: 11043855 [PubMed - indexed for MEDLINE]

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reference 5

link[1] ngk)
n.

One of the rings or loops forming a chain.

A unit in a connected series of units: *links of sausage; one link in a molecular chain.*

A unit in a transportation or communications system.

A connecting element; a tie or bond: *grandparents, our link with the past.*

An association; a relationship: *The Alumnae Association is my link to the school's present administration.*

A causal, parallel, or reciprocal relationship; a correlation: *Researchers have detected a link between smoking and heart disease.*

A cuff link.

Abbr. **li** A unit of length used in surveying, equal to 0.01 chain, 7.92 inches, or about 20.12 centimeters.

A rod or lever transmitting motion in a machine.

Computer Science. A segment of text or a graphical item that serves as a cross-reference between parts of a hypertext document or between files or hypertext documents. Also called **hotlink, hyperlink**.

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reference6

1: J Neural Transm Suppl. 1999;57:161-77.

Expression of the dihydropyrimidinase related protein 2 (DRP-2) in Down syndrome and Alzheimer's disease brain is downregulated at the mRNA and dysregulated at the protein level.

Lubec G, Nonaka M, Krapfenbauer K, Gratzer M, Cairns N, Fountoulakis M.

Department of Pediatrics, University of Vienna, Austria.
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Deteriorated migration, axonal pathfinding and wiring of the brain is a main neuropathological feature of Down Syndrome (DS). Information on the underlying mechanisms is still limited, although basic functions of a series of growth factors, cell adhesion molecules, guidance factors and chemoattractants for brain histogenesis have been reported. We used proteomics to detect differences in protein expression between control, DS and Alzheimer's disease brains: In five individual brain regions of 9 individuals of each group we performed two dimensional electrophoresis with MALDI--identification of proteins and determined mRNA levels of DRP-2. Significantly decreased mRNA levels of DRP-2 in four brain regions of patients with DS but not with AD as compared to controls were detected. 2D electrophoresis revealed variable expression of DRP-2 proteins, which showed a high heterogeneity per se. Dysregulation of DRP-2 was found in brains of patients with DS and AD presenting with an inconsistent pattern, which in turn may reflect the inconsistent neuropathological findings in patients with DS and AD. The decrease of mRNA DRP-2 steady state levels in DS along with deteriorated protein expression of this repulsive guidance molecule of the semaphorin/collapsin family, may help to explain deranged migration and histogenesis of DS brain and wiring of AD brain.

PMID: 10666674 [PubMed - indexed for MEDLINE]

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Examiner copy
2132.103 reference 7

1: J Intern Med. 2002 Aug;252(2):155-63.

Insulin resistance is accompanied by increased von Willebrand factor levels in nondiabetic women: a study of offspring of type 2 diabetic subjects compared to offspring of nondiabetic subjects.

Foss CH, Vestbo E, Froland A, Ingerslev J, Gjessing HJ, Mogensen CE, Damsgaard EM.

Medical Department M, Diabetes and Endocrinology, Aarhus Kommunehospital, Aarhus University Hospital, Aarhus, Denmark. chf@dadlnet.dk

OBJECTIVES: To examine whether levels of von Willebrand factor (vWF), fibrinogen and fibronectin are related to a parental history of type 2 diabetes and to determine possible explanatory factors for high versus low vWF and fibrinogen. DESIGN: Cross-sectional study. SUBJECTS, MAIN OUTCOME MEASURES: We compared vWF, fibrinogen and fibronectin in 88 nondiabetic offspring of type 2 diabetic subjects (relatives) and 103 offspring of nondiabetic subjects (controls). Other measurements included urinary albumin excretion rate, blood pressure, lipid profile and insulin resistance using homeostasis model assessment (HOMAIR). RESULTS: There were no significant differences in vWF (1.12 vs. 1.06 IU x mL(-1), P = 0.296), fibrinogen (3.2 vs. 3.1 g x L(-1); P = 0.263) or fibronectin (0.39 vs. 0.40 g x L(-1), P = 0.448) between relatives and controls. With multiple logistic regression we determined explanatory factors for high versus low vWF and fibrinogen. Age (P < 0.01), urinary albumin excretion rate (P < 0.05), ischaemic heart disease (IHD) (P < 0.05) were found to be significant explanatory factors for vWF above the median (1.10 IU x mL(-1)). Interaction between insulin resistance and sex was found. Odds ratio for high versus low insulin resistance was 18.39 (P < 0.001) for women and 1.92 (P = 0.32) for men. Body mass index (BMI) (P < 0.05), sex (P < 0.01), smoking status (P < 0.05) and IHD (P < 0.01) were significant explanatory factors for fibrinogen above the median (3.1 g x L(-1)). CONCLUSIONS: Levels of vWF, fibrinogen and fibronectin were not influenced by a parental history of type 2 diabetes. Insulin resistance was found to be a significant

risk indicator for high vWF only in women. This may indicate that insulin resistance is a higher risk factor for women than for men, when the outcome is endothelial dysfunction possibly resulting in overt cardiovascular disease.

PMID: 12190891 [PubMed - indexed for MEDLINE]

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1: Ann Oncol. 1999;10 Suppl 4:107-10.

Role of tumor markers and mutations in cells and pancreatic juice in the diagnosis of pancreatic cancer.

Tascilar M, Caspers E, Sturm PD, Goggins M, Hruban RH, Offerhaus GJ.

Department of Pathology, Academic Medical Center, University of Amsterdam, The Netherlands.

BACKGROUND: Unresectability at the time of presentation is the most important reason for the poor survival rate of pancreatic carcinoma. Molecular-based tests might improve the early detection of pancreatic cancer at a time when surgical resection is still an option for cure. METHODS: The literature was reviewed concerning the role of molecular-based tests applied to sources other than pancreatic tissue itself, including ERCP-samples, blood and stool, with emphasis on the detection of K-ras mutations and mutant p53 gene product. RESULTS: K-ras mutations have been successfully detected in ERCP brush samples, leading to an increase of the sensitivity and improvement of the diagnostic yield. When pancreatic juice and duodenal fluid are tested for K-ras mutations, the yield is less. K-ras mutations can also be detected in the blood, especially in patients with larger tumors. The presence of K-ras mutations proved also to be useful in discriminating benign and malignant liver nodules, i.e. when during surgery there is suspicion of liver metastases of pancreatic cancer. The accumulation of p53 gene product to immunochemically detectable levels in ERCP brush samples also increases the sensitivity of conventional light microscopy. Other molecular markers such as telomerase and TIMP-1 may prove to be useful too, but await more extensive evaluation. CONCLUSION: Molecular-based tests may be of value in the early detection of pancreatic cancer and might therefore contribute to a better patient survival rate.

Publication Types:
- Review
- Review, Tutorial

PMID: 10436798 [PubMed - indexed for MEDLINE]

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